

## NOTES ON NESTING GREAT HORNED OWLS IN SOUTHERN ARIZONA

by

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The Great Horned Owl (*Bubo virginianus*) is a common resident of the Lower Sonoran Desert in southern Arizona. This desert is dominated by stands of Saguaro Cacti (*Carnegiea gigantea*) and Palo Verde Trees (*Cercidium microphyllum* and *Cercidium floridum*) with Triangle Bur-Sage (*Franseria deltoidea*) as the predominant shrub species. Field data were gathered, incidental to a Harris's Hawk (*Parabuteo unicinctus*) study, on 16 different owl nests from 25 February to 15 June, 1972, in Pima and Pinal Counties, Arizona. Clutch size, nesting success and nest and cactus heights (to nearest six inches) were determined by a 25-foot (7.6 m) extension ladder and 10-foot (3 m) breakdown poles. A mirror was attached to the poles to aid in seeing nest contents.

### *Productivity*

Laying dates of Great Horned Owl clutches centered around the second and third weeks of February (six nests). Late clutches were laid during the first and second weeks of March (three nests). The 16 owl nests contained 40 eggs (2.5 eggs per nest); nine nests had two eggs, six had three eggs, and one had four eggs.

Craighead and Craighead (1956) found averages of 1.8 eggs and 2.0 eggs (six and four nests, respectively) per active nest in Michigan; in Wyoming they found 2.2 eggs (four nests) per active nest. Wolhuter (1969) had an average of 1.9 eggs (nine nests) per active nest in Kansas. Seidensticker and Reynolds (1971) had an average of 2.2 eggs (six nests) per active nest in Montana. Of 14 horned owl nests in Florida (Bent 1937), "two contained three eggs or young, and the others were sets of two."

A nest was considered successful if at least one owl was raised to an age of approximately four weeks. Nine of 16 nests were successful and produced 1.1 young per nest (17 owls total). Orians and Kuhlman (1956) in their study of Red-tailed Hawk (*Buteo jamaicensis*) and Great Horned Owl populations in Wisconsin found that the owls fledged averages of 1.1 (13 nests), 1.9 (17 nests), and 1.3 (11 nests) per active nest in 1953, 1954 and 1955, respectively. Craighead and Craighead (1956) found averages of 0.5 and 1.0 (six and four nests, respectively) fledged per active nest in Michigan; in Wyoming they found 2.0 (four nests) fledged per active nest. Wolhuter (1969) had an average of 1.4 (nine nests) fledged per active nest. Hagar (1957) had an average of 1.7 (16 nests) fledged per active nest, for a four year period in New York state. Perry Conway reports (pers. comm.) an average of 1.6 owls (12 nests) fledged per active nest

in eastern Kansas in 1971. In 1972, 1.7 (22 nests) were fledged per active nest.

The cause of nesting failure could be determined for only one nest. In this instance the nest saguaro collapsed at its base. No trace of the single owlet or the adults was found in the immediate vicinity.

There were two known renests of Great Horned Owls due to the loss of first clutches for undetermined reasons. One pair renested in a Red-tailed Hawk nest, which had failed several weeks prior. This owl nest contained two eggs and was approximately 200 yards (183 m) south of the previous site used by the owls. The second attempt was also unsuccessful. The other renest occurred in the same nest as that of the first clutch. It proved unsuccessful when the nest saguaro collapsed.

### *Nesting Sites*

Fifteen Great Horned Owl nests were located in old hawk nests situated in saguaro cacti. The remaining nest was in an exposed saguaro "cavity" on the uppermost trunk of the cactus. The frequency of horned owl nests in saguaros can be partially explained by the fact that saguaro nests are considerably more numerous than tree nests in the desert. However, in previous years horned owls have been found nesting in old hawk nests in Palo Verde and Ironwood Trees (*Olneya tesota*). Three of the 15 horned owl nests were known to be old Harris's Hawk nests, while two were old Red-tailed Hawk nests. It is likely the other 10 nests were also built by Harris's and Red-tailed Hawks.

Of the 48 Great Horned Owl nests found by Orians and Kuhlman (1956) in their study, 31 (64%) were in old Red-tailed Hawk nests. In southeastern Massachusetts 11 of 13 horned owl nests were old nests of the Red-tailed Hawk (Bent 1937). Conway (pers. comm.) states that "in eastern Kansas, 80-90% of the Great Horned Owl nests are in old Red-tailed Hawk nests." He goes on to explain that this figure may be biased by the fact that cavity nests in trees are more difficult to locate than stick nests.

The 14 stick nests in my observations (not counting the nest used as a renest) had a mean height of 18.0 feet (5.5 m), ranging from 9.5 (2.9 m) to 26.0 feet (7.9 m). The saguaros used as nesting sites had a mean height of 27.0 feet (8.2 m), ranging from 21.0 (6.4 m) to 32.5 feet (9.9 m). Height of the cavity nest was 15.0 feet (4.6 m), while saguaro height was 18.5 feet (5.7 m).

### *Aggressive Behavior*

Sixteen young owls were banded. Reactions to nest disturbances by observers were usually met by bill "popping" and hooting by the adult owls. Only twice, on two separate occasions at two different nests was I struck by adult horned owls flying at me. On both occasions I was banding by myself and was on an extension ladder climbing down from the nest at midday.

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